

## RESEARCH

## Open Access



# Social Conduct Scale (SCS): a psychometric investigation

Caroline Tozzi Reppold<sup>1\*</sup>, Nelson Hauck Filho<sup>2</sup>, Claudio Simon Hutz<sup>3</sup> and Marco Antônio Pereira Teixeira<sup>3</sup>

## Abstract

The social conduct of an individual comprises all the interpersonal behaviors that he or she exhibits in the social contexts he or she is exposed to. The Social Conduct Scale (SCS) is a self-report instrument developed to provide researchers and clinicians with information on prosocial, antisocial and oppositional-defiant tendencies of Portuguese-speaking children and adolescents. In the present study, we conducted an analysis of the criterion validity of the SCS by comparing the scores obtained from a large population-based sample ( $N = 1,172$ ) against an offender ( $N = 129$ ), a scholar ( $N = 31$ ), and a clinic-referred ( $N = 24$ ) sample of adolescents with marked previous conduct problems. As expected, antisocial youths had significantly higher means on antisocial behaviors and lower means on prosocial tendencies when compared to the population-based sample. Overall, findings supported the hypothesized criterion validity of the SCS. The instrument might play a role as a helpful resource for researchers, clinicians and practitioners interested in assessing the social conduct of Brazilian children and adolescents.

**Keywords:** Antisocial behavior, Conduct disorder, Oppositional-defiant disorder, Adolescents

## Background

“Antisocial behavior” designates an intentional disrespect for implicit or explicit social norms of everyday life, manifested as covert or relational aggression, overt verbal aggression and, in extreme cases, violent physical aggression (Burt et al. 2011; Burt and Donnellan 2009; Verona et al. 2008). Antisocial behaviors of young people often present as non-cooperation and rebellion or, alternatively, as deception, aggression and destructive behaviors (Grove et al. 2008). Eventually, persistent patterns of these oppositional tendencies and conduct problems may exceed the threshold for a diagnostic of Oppositional-Defiant Disorder and/or Conduct Disorder (American Psychiatric Association 2013). In the present study, we investigate the ability of a self-report inventory of antisocial behaviors and oppositional-defiant tendencies to discriminate a general population sample of adolescents from three criterion groups of youths with known history of conduct problems.

Many studies have shown a positive relationship between child and adolescent oppositional/antisocial

conduct and adult deviant, criminal behaviors (e.g., Moffitt 1993; Moffitt et al. 2002; Robins 1966). Oppositional-defiant tendencies and conduct problems positively predict several psychosocial impairments (Pardini and Fite 2010), and they may develop, if not properly treated, into more serious conditions such as Antisocial Personality Disorder and psychopathy (Frick and Viding 2009; Grove et al. 2008; Smith and Hung 2012). Thus, assessing the social conduct of children and adolescents represents a first step in the planning of more effective interventions; this may drastically reduce the long-term costs of chronic antisocial behaviors to individuals and to society in a broad sense (Romeo et al. 2006).

To help researchers and professionals in assessing the social conduct of youths in Brazil, Reppold (2005) developed a comprehensive, 80-item self-report inventory, the Social Conduct Scale (SCS). Contrasting with other instruments available in Brazil (e.g., Borsa and Bandeira 2014; Gouveia et al. 2009), two of the three subscales that comprise the SCS—the Antisocial and Oppositional-Defiant subscales—were explicitly developed to assess features common to DSM-IV-TR disorders such as Attention Deficit/Hyperactivity Disorder, Oppositional Defiant Disorder, and Conduct Disorder (Pacheco et al. 2005). As the diagnostic criteria for these

\* Correspondence: [reppold@ufcspa.edu.br](mailto:reppold@ufcspa.edu.br)

<sup>1</sup> Universidade Federal de Ciências da Saúde de Porto Alegre (UFCSPA), PPG Ciências da Saúde/PPG Ciências de Reabilitação/PPG Psicologia em Saúde, Porto Alegre, RS, Brazil

Full list of author information is available at the end of the article

conditions underwent few changes with the advent of the DSM-5 (American Psychiatric Association 2013), the SCS remains largely informative on most of the relevant characteristics of such disorders.

The third SCS subscale is named “Prosocial,” and it captures to what extent youths display prosocial behaviors and emotions. One change from the DSM-IV-TR to DSM-5 that is worth mentioning is the focus now given to callous-unemotional traits as a diagnostic specifier for Conduct Disorder, features that are referred to as “limited prosocial emotions” (American Psychiatric Association 2013). Callous unemotional traits comprehend lack of remorse, callousness, carelessness and unemotionality, features that when combined to the other Conduct Disorder criteria, yield a profile that has been linked to high levels of aggression and cruelty (Kahn et al. 2012). Accordingly, low scores in this SCS Prosocial subscale can potentially serve as a proxy to callous-unemotional traits, affording a comprehensive assessment of the social conduct of youths by clinicians and researchers. In turn, high Prosocial scores can instead reveal important protective factors to be considered when conducting a balanced assessment of strengths and weaknesses of children and adolescents.

In research and applied contexts, self-report psychometric instruments as the SCS are especially useful for assessment purposes because they save time and resources (Widiger and Frances 1987). However, using self-report instruments in the assessment of socially undesirable features is still a contentious issue in the literature. On the one hand, some evidence suggests antisocial traits (e.g., psychopathy) may predispose individuals toward faking responses on self-report inventories, especially during testing situations where results directly impact on one’s future—say, a job interview (Edens 2004). On the other hand, socially desirable responding is regarded as a typical method bias of self-report instruments that does not necessarily impair validity (Holden and Passey 2010; Ones and Viswesvaran 1998).

Therefore, self-report inventories of antisocial traits such as the SCS should always be put to the test as to their ability in truly separating criterion groups of

individuals with and without a history of antisocial behavior. In the present study, we investigate the capacity of the self-report SCS in validly and reliably discriminating a sample of adolescents from the general population from three criterion groups with a known history of conduct problems: a scholar, an offender and a clinic-referred sample. We hypothesized antisocial youths would exhibit higher scores on conduct problems and oppositional tendencies, along with lower scores on prosocial skills when compared to the general population-based sample.

## Method

### Participants and procedures

We used four distinct convenience samples of Brazilian adolescents. Sample 1 was composed of mixed public and private school and high school students ( $N = 1,172$ ; mean age = 14.0 years,  $SD = 1.66$ ; range = 11–17 years; 52.30 % girls), and served as a baseline against which we compared the social conduct scores of the other samples. Sample 2 was composed of adjudicated adolescents that were under a court’s jurisdiction because of offending behavior ( $N = 129$ ; mean age = 15.4 years;  $SD = 1.46$ ; range = 12–17 years; 68.90 % boys). Sample 3 comprised youths diagnosed with Conduct Disorder and/or Oppositional-Defiant Disorder by clinical psychiatrists, neurologists and psychologists, according to a standardized interview for assessing the DSM criteria, the SCID-I ( $N = 24$ ; mean age = 15.70 years;  $SD = 1.06$ ; range = 11–17 years; 58.33 % girls). Sample 4 comprised school and high school students with conduct problems but with no known history of offending behavior ( $N = 31$ ; mean age = 15.3 years;  $SD = 0.86$ ; range = 12–17 years; 61.30 % boys). The Institutional Review Board from the Hospital de Clínicas de Porto Alegre previously approved the study project (protocol n. 05-052). All data collection followed standardized procedures; informed consent was obtained from all participants and their legal guardians. Further demographic information of each separate sample can be found in Table 1.

**Table 1** Demographic information on the sample groups

	Population-based	Offender	Clinic-referred	Scholar
Type of school				
Public	780 (66.3 %)	102 (90.3 %)	19 (79.16 %)	17 (58.84 %)
Private	395 (33.7 %)	11 (9.7 %)	5 (20.84 %)	14 (45.16 %)
Education				
Elementary school (5th to 8th grade)	386 (32.9 %)	129 (100 %)	20 (83.33 %)	20 (64.51 %)
High School (1st to 3rd grade)	786 (67.1 %)	0 (0.0 %)	4 (16.66 %)	11 (35.49 %)

Note. Frequency analyses considering  $n$  of valid cases (non-missing data) divided by the total  $n$  in each group

### Instrument

Social Conduct Assessment Scale (SCAS; Reppold 2005) is an 80-item self-report psychometric instrument that addresses three distinct aspects of the social conduct of children and adolescents: Antisocial (40 items,  $\alpha = .92$ ), Oppositional-Defiant (17 items,  $\alpha = .84$ ); and Prosocial (23 items,  $\alpha = .83$ ). A five-point Likert scale was employed for each item, 1 = *Strongly disagree* and 5 = *Strongly agree*.

### Data analysis

Kolmogorov-Smirnov tests of normality, measures of skewness and kurtosis, and a visual inspection of histograms supported the use of parametric statistics. We tested the null hypothesis of equality of means between groups with ANOVA and Scheffe's post-hoc test. The defined alpha value was .05.

### Results

Table 2 presents descriptive information for each scale (based on sum scores), along with the results for ANOVA and post-hoc tests. All ANOVA tests were statistically significant at  $p < .001$ . In comparison to the population-based sample, we observed extremely higher scores on conduct problems (Antisocial scale) in the forensic sample,  $d = 1.20$ , as well as in clinic-referred,  $d = 1.05$ , and scholar adolescents,  $d = .78$ . Forensic, clinic-referred, and scholar adolescents revealed lower scores on prosocial behaviors (Prosocial scale) than adolescents from the population-based sample,  $d = 1.99$ ,  $d = .69$ , and  $d = 1.26$ , respectively. In addition, clinic-referred adolescents exhibited extremely higher means on oppositional-defiant tendencies (Oppositional-Defiant scale) as compared to youths from the general population,  $d = 1.67$ . Unexpectedly, scholar and forensic youngsters had non-significantly different means on oppositional-defiant tendencies as compared to youngsters from the general population.

### Discussion

Our findings support the hypothesized criterion validity of the SCS. Despite of relying on self-report to provide information on social conduct features, the SCS was able to discriminate the criterion groups in a way that is consistent with the theoretical expectations. More specifically, all three criterion groups scored higher on

antisocial behaviors and lower on prosocial behaviors when compared to a sample of adolescents from the Brazilian general population—a result that is largely consistent with previously reported findings (Calkins and Keane 2009). We must stress the scholar sample did not include youths with history of offending behavior or more severe antisocial problems. The fact the SCS did succeed in distinguishing this particular group from the population-based sample suggests the instrument is sufficiently sensitive to detected even nuanced antisocial and prosocial features in the social conduct of youths.

Unexpectedly, only clinic-referred adolescents had higher means on oppositional-defiant traits as compared to youths from the general population. Given the empirical distinction between conduct problems and oppositional-defiant tendencies (Loeber et al. 1993), we assume the results reflect a true lack of between-groups mean difference in this specific dimension of social conduct—even though groups differed in prosocial and antisocial tendencies. If correct, this interpretation then raises the question of why are institutional adolescents with a history of offending behavior and scholar adolescents with conduct problems not significantly more antagonists than Brazilian adolescents from the general population. Whether findings are solely due to the non-random nature of the samples, or indeed antagonism is a normative feature of adolescents in Brazil, this remain an issue to be further investigated.

### Conclusion

Beyond supporting the validity of the SCS, present findings have clinical implications, as they reveal that self-report instruments are useful and informative resources for assessing antisocial behaviors and rebellious attitudes in youth. Results largely supported self-reported conduct problems and oppositional-defiant attitudes as a valid and reliable source of information for the assessment of antisocial behaviors in children and adolescents. Consistent with initial hypotheses, the self-report method did discriminate youngsters from the general population and antisocial youngsters. Thus, results contradict beliefs of unreliability and untrustworthiness of self-report instruments in the assessment of social conduct of children and adolescents.

**Table 2** ANOVAS and post-hoc tests

Scale	Population-based ( $n = 1,172$ )		Offender ( $n = 129$ )		Clinic-referred ( $n = 24$ )		Scholar ( $n = 31$ )		<i>F</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
ANT	73.2 <sup>a</sup>	23.0	100.2 <sup>d</sup>	21.3	94.5 <sup>c</sup>	17.4	92.8 <sup>b</sup>	27.2	39.28*
PRO	86.1 <sup>c</sup>	13.8	58.6 <sup>a</sup>	13.1	77.0 <sup>b</sup>	12.7	69.9 <sup>b</sup>	12.0	95.09*
OPD	48.1 <sup>a</sup>	12.8	47.4 <sup>a</sup>	9.0	66.3 <sup>b</sup>	9.0	43.4 <sup>a</sup>	12.3	19.15*

Note. ANT Antisocial Scale, PRO Prosocial Scale, OPD Oppositional-Defiant Scale. Differences between <sup>a</sup>, <sup>b</sup>, <sup>c</sup>, and <sup>d</sup> statistically significant at  $p < .05$

\* $p < .001$

Future research should use Item Response Theory models to investigate the amount of information provided by the SCS on each of the three targeted dimensions of social conduct. Test Information Functions would help to estimate the psychometric information and the measurement errors yielded by each SCS subscales, a matter of relevance to clinicians and practitioners. A potential shortcoming of this study was the inequality of sample sizes in each sample used for the sake of comparison. Given the typical difficulties and constraints when collecting data from institutional, scholar and clinically referred samples, we had to rely on quite small sample sizes to perform these comparisons. Further studies with larger samples should try to replicate the findings reported here, in order to provide an even more thorough argument in regards to the criterion validity of the SCS. We should also stress that we had insufficient information on participants' use of psychiatric medication, the reason why the effect sizes we found could be slightly different had we controlled this variable for. Nevertheless, our preliminary results support the use of the SCS as a valid and reliable self-report tool of social conduct features of Brazilian adolescents.

#### Competing interests

The authors declare that they have no competing interests.

#### Authors' contributions

CTR was responsible for planning, data collection, analysis, discussion and drafting of the article. NHF was responsible for analysis, discussion and drafting of the article. CSH was responsible for planning, data collection, analysis, discussion and drafting of the article. MAPT was responsible for analysis, discussion and drafting of the article. All authors read and approved the final manuscript.

#### Author details

<sup>1</sup>Universidade Federal de Ciências da Saúde de Porto Alegre (UFCSPA), PPG Ciências da Saúde/PPG Ciências de Reabilitação/PPG Psicologia em Saúde, Porto Alegre, RS, Brazil. <sup>2</sup>USF, PPG Psicologia, Itatiba, SP, Brazil. <sup>3</sup>UFRGS, PPG Psicologia, Porto Alegre, RS, Brazil.

Received: 10 March 2016 Accepted: 7 April 2016

Published online: 19 April 2016

#### References

- American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, 5th Edition: DSM-5. Washington: American Psychiatric Publishing; 2013.
- Borsa JC, Bandeira DR. Adaptação transcultural do Questionário de Comportamentos Agressivos e Reativos entre Pares no Brasil. *Psico-USF*. 2014;19(2):287–96. doi:10.1590/1413-82712014019002015.
- Burt SA, Donnellan MB. Development and validation of the Subtypes of Antisocial Behavior Questionnaire. *Aggress Behav*. 2009;35(5):376–98. doi:10.1002/ab.20314.
- Burt SA, Donnellan MB, Tackett JL. Should Social Aggression be Considered "Antisocial"? *J Psychopathol Behav Assess*. 2011;34(2):153–63. doi:10.1007/s10862-011-9267-0.
- Calkins SD, Keane SP. Developmental origins of early antisocial behavior. *Dev Psychopathol*. 2009;21(4):1095–109. doi:10.1017/S095457940999006X.
- Edens JF. Effect of response distortion on the assessment of divergent facets of psychopathy. *Assessment*. 2004;11(1):109–12.
- Frick PJ, Viding E. Antisocial behavior from a developmental psychopathology perspective. *Dev Psychopathol*. 2009;21(4):1111–31. doi:10.1017/S0954579409990071.
- Gouveia VV, Santos WS, Pimentel CE, Diniz PKC, da Fonseca PN. Questionário de comportamentos anti-sociais e delitivos: evidências psicométricas de

- uma versão reduzida. *Psicologia*. 2009;22(1):20–8. doi:10.1590/S0102-79722009000100004.
- Grove AB, Evans SW, Pastor DA, Mack SD. A meta-analytic examination of follow-up studies of programs designed to prevent the primary symptoms of oppositional defiant and conduct disorders. *Aggress Violent Behav*. 2008;13(3):169–84. doi:10.1016/j.avb.2008.03.001.
- Holden RR, Passey J. Socially desirable responding in personality assessment: Not necessarily faking and not necessarily substance. *Person Individ Differ*. 2010;49(5):446–50. doi:10.1016/j.paid.2010.04.015.
- Kahn RE, Frick PJ, Youngstrom E, Findling RL, Youngstrom JK. The effects of including a callous-unemotional specifier for the diagnosis of conduct disorder. *J Child Psychol Psychiatry*. 2012;53(3):271–82. doi:10.1111/j.1469-7610.2011.02463.x.
- Loeber R, Keenan K, Lahey BB, Green SM, Thomas C. Evidence for developmentally based diagnoses of oppositional defiant disorder and conduct disorder. *J Abnorm Child Psychol*. 1993;21(4):377–410. doi:10.1007/BF01261600.
- Moffitt TE. Adolescence-limited and life-course-persistent antisocial behavior: a developmental taxonomy. *Psychol Rev*. 1993;100(4):674–701.
- Moffitt TE, Caspi A, Harrington H, Milne BJ. Males on the life-course-persistent and adolescence-limited antisocial pathways: follow-up at age 26 years. *Dev Psychopathol*. 2002;14(1):179–207.
- Ones DS, Viswesvaran C. The Effects of Social Desirability and Faking on Personality and Integrity Assessment for Personnel Selection. *Hum Perform*. 1998;11(2-3):245–69. doi:10.1080/08959285.1998.9668033.
- Pacheco J, Alvarenga P, Reppold C, Piccinini CA, Hutz CS. Estabilidade do Comportamento Anti-social na Transição da Infância para a Adolescência: Uma Perspectiva Desenvolvimentista. *Psicologia*. 2005;1:55–61.
- Pardini DA, Fite PJ. Symptoms of conduct disorder, oppositional defiant disorder, attention-deficit/hyperactivity disorder, and callous-unemotional traits as unique predictors of psychosocial maladjustment in boys: advancing an evidence base for DSM-V. *J Am Acad Child Adolesc Psychiatry*. 2010;49(11):1134–44. doi:10.1016/j.jaac.2010.07.010.
- Reppold CT. Construção, validação e normatização de uma bateria de cinco escalas para avaliação de ajustamento psicológico em adolescentes. Porto Alegre: Federal University of Rio Grande do Sul; 2005.
- Robins LN. Deviant children grown up. Baltimore: Williams & Wilkins; 1966.
- Romeo R, Knapp M, Scott S. Economic cost of severe antisocial behaviour in children—and who pays it. *Br J Psychiatry*. 2006;188:547–53. doi:10.1192/bjp.bp.104.007625.
- Smith CS, Hung L-C. The relative influence of conduct problems and attention-deficit hyperactivity disorder in the development of adolescent psychopathy. *Aggress Violent Behav*. 2012;17(6):575–80. doi:10.1016/j.avb.2012.08.003.
- Verona E, Sadeh N, Case SM, Reed A, Bhattacharjee A. Self-Reported Use of Different Forms of Aggression in Late Adolescence and Emerging Adulthood. *Assessment*. 2008;15(4):493–510. doi:10.1177/1073191108318250.
- Widiger TA, Frances A. Interviews and inventories for the measurement of personality disorders. *Clin Psychol Rev*. 1987;7(1):49–75. doi:10.1016/0272-7358(87)90004-3.

**Submit your manuscript to a SpringerOpen<sup>®</sup> journal and benefit from:**

- Convenient online submission
- Rigorous peer review
- Immediate publication on acceptance
- Open access: articles freely available online
- High visibility within the field
- Retaining the copyright to your article

Submit your next manuscript at ► [springeropen.com](http://springeropen.com)